IN THE CLAIMS:

The following is a current listing of claims and will replace all prior versions and listings of claims in the application. Please amend the claims as follows:

1. (Currently Amended) An apparatus, comprising:

a switch having a plurality of ports, wherein ~~said~~ the switch is configured to receive a packet on a first of ~~said~~ the plurality of ports, ~~said~~ the packet including header data including path routing information, wherein the path routing information includes a first turn value and a bit count value ~~specifying a second of the plurality of ports relative to the first port~~;

wherein ~~said~~ the switch is configured, based on an identifier for the first port, the first turn value, ~~said header data~~ and the number of ~~said~~ the plurality of ports, to transmit ~~said~~ the packet on a ~~the~~ second of the plurality of ports, wherein the switch is configured to select the first turn value using the bit count value.

2. (Currently Amended) A system, comprising:

a switch having a plurality of ports including a first port and a second port, wherein ~~said~~ the switch is configured to receive a packet on ~~said~~ the first port, wherein ~~said~~ the packet includes header data, ~~said~~ the header data comprising path routing information that includes a turn pool, wherein ~~said~~ the turn pool comprises a plurality of turn values~~, including a turn value specifying the second port relative to the first port~~;

wherein the switch is configured to select one of the plurality of turn values, and wherein the switch is further configured, based on ~~said header data~~ the selected turn value, an identifier for the first port, and the number of ~~said~~ the plurality of ports, to transmit ~~said~~ the packet on ~~said~~ the second port.

3. (Canceled)

4. (Currently Amended) The system of claim 2, wherein ~~said~~ the header data is comprised of a credit length, a bit count value, an operation, a Path Identifier (PID) index, a Maximum Transmission Unit (MTU) and an Extended Unique Identifier (EUI).

5-12.   (Canceled)

13.   (Currently Amended) The system of claim 2, wherein ~~said~~ the header data further comprises [[a]] a bit count value, wherein the switch is configured to use the bit count value to select a turn value from the plurality of turn values.

14.   (Canceled)

15.   (Currently Amended) A switch, comprising:

~~a plurality of ports;~~

first means for receiving a packet on a first port of ~~said~~ a plurality of ports of the switch, ~~said~~ the packet comprising path routing information ~~packet header data~~, wherein ~~said~~ the path routing information ~~packet header data~~ comprises a turn pool, wherein ~~said~~ the turn pool comprises a plurality of turn values~~, one of which specifies a second port of said plurality of ports relative to said first port~~;

second means for selecting one of the plurality of turn values in the turn pool;

~~second~~ third means for using ~~said~~ the selected turn value ~~turn pool~~, an identifier of the first port, and the number of ~~said~~ the plurality of ports to select ~~said~~ a second port of the plurality of ports on which to transmit ~~said~~ the packet; and

~~third~~ fourth means for transmitting ~~said~~ the packet on ~~said~~ the second port.

16.   (Canceled)

17.   (Currently Amended) The switch of claim 15, further comprising:

~~fourth~~ fifth means for modifying ~~said~~ the path routing information ~~packet header data~~ prior to transmitting ~~said~~ the packet.

18.   (Currently Amended) A method, comprising:

receiving, at a switch within a network, an encapsulated packet, wherein ~~said~~ the encapsulated packet includes ~~header data~~ path routing information that includes a plurality of turn values, and wherein ~~said~~ the encapsulated packet is received at first of a plurality of ports of ~~said~~ the switch;

the switch selecting one of the plurality of turn values using a bit count value included in the path routing information;

the switch determining a second port of ~~said~~ the plurality of ports using ~~said~~ the selected turn value, an identifier for the first port, ~~header data~~ and the number of ~~said~~ the plurality of ports; and

the switch transmitting ~~said~~ the encapsulated packet ~~from said switch~~ via ~~said~~ the second port.

19.   (Currently Amended) The method of claim 18, further comprising modifying ~~said~~ the bit count value ~~header data~~ prior to transmitting the encapsulated packet via ~~said~~ the second port.

20.   (Currently Amended) A method of path routing a packet from a source to a destination within a fabric having at least one switch, ~~said~~ the method comprising:

receiving an encapsulated packet at a first of a plurality of ports of ~~said~~ the at least one switch, wherein the encapsulated packet includes a header including a first turn value ~~that specifies a second of said plurality of ports relative to the first port~~;

determining ~~said~~ a second of the plurality of ports using ~~said~~ the first turn value, an identifier for the first port, ~~header of the encapsulated packet~~ and the number of ~~said~~ the plurality of ports; and

transmitting ~~said~~ the encapsulated packet from ~~said~~ the at least one switch via ~~said~~ the second port.

21.   (Currently Amended) The method of claim 20, wherein ~~said packet field data~~ the header further comprises a bit count value, the method further comprising using the bit count value to select the first turn value from among a plurality of turn values in the header.

22.   (Currently Amended) The method of claim 20, further comprising modifying ~~said~~ the header prior to transmitting the packet via ~~said~~ the second port.

23.   (Currently Amended) The method of claim 22, wherein ~~said~~ the header further comprises a bit count value, the method further comprising using the bit count value to select the first turn value from among a plurality of turn values in the header.

24.   (Currently Amended) The method of claim 20, wherein ~~said~~ the fabric comprises a plurality of switches, and ~~said~~ the method further comprises repeating ~~said~~ the receiving, the determining, and the transmitting at various ones of the plurality of switches with corresponding ones of a plurality of turn values ~~associated with the packet~~ until ~~said~~ the packet reaches ~~said~~ the destination, wherein the plurality of turn values includes the first turn value, and wherein the plurality of turn values are located in the header.

25.   (Currently Amended) The method of claim 21, ~~said~~ the header further comprising a turn pool including [[a]] the plurality of turn values ~~that includes said first turn value~~, wherein the destination is configured to use ~~said~~ the turn pool and the bit count value of ~~said~~ the packet ~~are usable by said destination~~ to create a second header and [[to]] encapsulate the second header within a second packet to be routed from ~~said~~ the destination to ~~said~~ the source.

26.   (Canceled)

27.   (Currently Amended) The apparatus of claim 1, ~~said header data~~ the path routing information including a plurality of turn values that includes ~~said~~ the first turn value, wherein each of the plurality of turn values corresponds to a respective network device within a path for ~~said~~ the packet ~~and specifies an output port of its respective network device relative to an input port of the respective network device~~, and wherein a given one of the respective network devices in the path that receives the packet on a corresponding input port is configured to use the bit count value to select one of the plurality of turn values as a current turn value, and wherein the

given network device is further configured to transmit ~~said~~ the packet on an output port of the given network device, wherein the output port ~~that~~ is specified by the current turn value, the corresponding input port of the given network device, and the number of ports of the given network device ~~the corresponding one of the plurality of turn values~~.

28.   (Currently Amended) The method of claim 20, wherein ~~said~~ the header includes a turn pool including a plurality of turn values that includes ~~said~~ the first turn value.